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Obstetric Practice

✓ BY

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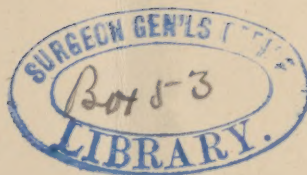


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## HYDRATE OF CHLORAL IN OBSTETRIC PRACTICE.

BY WILLIAM L. RICHARDSON, M. D.,

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IN 1832 Baron Liebig discovered a substance to which he gave the name of chloral. It was an oily, pungent fluid, which readily underwent decomposition. On combining with water it formed a crystalline hydrate, which could easily be kept from undergoing any further chemical change. Beyond the addition of a new substance to the long list of chemical compounds, no practical results followed the discovery, until Professor Liebreich, in a paper read before the Medical Society of Berlin, June 2, 1869, called the attention of the medical profession to the great therapeutic value of hydrate of chloral as a hypnotic and anesthetic agent. Unquestionably the German professor overestimated its value, as is usually the case in the early experiments with all newly discovered therapeutic agents; but more recent investigations have shown that chloral is among the most valuable additions which have of late years been made to the list of pharmaceutic preparations now extensively used by the profession.

The announcement of Professor Liebreich was received with the skepticism which too often awaits any new discovery; but the British Association for the Advancement of Science took up the subject, and requested Dr. B. W. Richardson, of London, to experiment with the new drug; and his report, while not fully coinciding with the views of Liebreich, yet showed that chloral was a drug well deserving the attention which it was receiving at the hands of the medical profession.

Since that time chloral has come into general favor, and

is now very extensively used for the relief of many symptoms and in the treatment of many diseases, where, formerly, opiates and bromide of potassium were prescribed. In obstetric practice the use of chloral possesses great advantages over opiates, being followed by none of the unpleasant symptoms so frequently observed after the administration of the latter. In small doses its action is soporific, while in larger quantities, or given more frequently, it acts to a certain degree as an anesthetic, although its value as a substitute for chloroform or ether has been greatly overestimated. During the past two years I have had frequent occasion to test its value in the practice of obstetrics, and have rarely been disappointed in the results obtained. A few cases will, perhaps, best illustrate the class of symptoms for the relief of which it is especially adapted. For the *modus operandi*, by which the results produced by chloral are brought about, I would refer to the recorded experiments of numerous physiologists who have from time to time written upon the subject.

*Nausea and Vomiting.* — How to relieve the distressing nausea and vomiting which occasionally accompany the earlier months of pregnancy, is oftentimes one of the most difficult tasks which a physician is called upon to accomplish. Various remedies have been recommended which occasionally succeed, but not unfrequently fail of affording the desired relief. The use of chloral in such cases was suggested to me by reading the report<sup>1</sup> of four cases of excessive vomiting occurring during pregnancy which were immediately relieved, under the care of Dr. D. B. Simmons (Yokohama), by the injection per rectum of thirty grains of chloral morning and evening. I venture to report briefly the following cases, in the hope that others may be induced to add chloral to the long list of drugs which occasionally afford relief to patients suffering from this most distressing symptom. Although chloral has proved successful in a number of cases in which I have tried it, I have, however, twice failed in obtaining, under apparently similar circumstances, any benefit whatever from its use.

<sup>1</sup> *London Medical Record*, June 1, 1874.



CASE I. — F. F., aged 28. Three and a half months pregnant with her second child. The nausea and vomiting were so excessive, that for the last three weeks before I saw her (May 16, 1875), she was scarcely able to retain any food whatever. Dilute hydrocyanic acid, creasote, and oxalate of cerium having successively failed, twenty grains of chloral were ordered to be taken three times a day, a quarter of an hour before eating. Thirty-six hours later she was able to retain her breakfast, although complaining of a slight nausea during the day. With one exception, and that when the chloral was accidentally omitted, no further vomiting occurred, until at the end of ten days, when the chloral was omitted altogether, and the vomiting returned the following day. The chloral was again ordered, with immediate and complete relief.

CASE II. — G. W., aged 31, came to see me December 28, 1875, when two months pregnant with her fourth child. In all her previous pregnancies she had suffered for several weeks with a nausea and vomiting, which were not limited to the earlier hours of the day. She was ordered to take fifteen grains of chloral a quarter of an hour before each meal, and to take a light breakfast of toast and coffee in bed before rising. Three weeks later she reported that the relief experienced had been almost immediate.

CASE III. — F. B., aged 22, consulted me October 17, 1875, when about two months pregnant with her first child. The nausea and vomiting were very distressing, and already productive of a very marked effect on the patient's general condition. Very little nourishment of any sort was retained. Chloral was ordered as in the previous case, but each time the medicine was taken it was at once vomited. Thirty grains were then given by the rectum morning and evening, and the relief experienced by the patient was very marked. After the third day the medicine was given by the mouth in twenty grain doses before each meal.

*After-pains.* — The pains which accompany the post-partum contractions of the uterus are oftentimes so severe and protracted as to be a source of almost as much dread to the

patient as the true pains of labor. There can be no question that, if proper care be shown in securing an immediate contraction of the uterus after the expulsion of the placenta, it will be rarely necessary to use any medical treatment subsequently for the alleviation of after-pains. The administration of a drachm of the fluid extract of ergot, as soon as the third stage of labor is completed, will often alone suffice to prevent the occurrence of after-pains severe enough to call for any medical interference. Occasionally, however, especially in cases where a patient has had a number of children, or where the labor has been very short, some anodyne will be required. In such cases chloral will be found to be far superior to any preparation of opium, producing at once freedom from suffering and a natural sleep, from which the patient awakes refreshed, and with none of the headache or other unpleasant symptoms which so frequently follow the use of opium.

CASE IV. — S. S., aged 38, was delivered of her sixth child at the Boston Lying-in Hospital, October 25th. The labor was normal. After preceding labors she had suffered severely and for a long time from after-pains. Eight hours after delivery the pains became very strong and fifteen grains of chloral were given, the dose being repeated in three quarters of an hour. Relief was shortly obtained, and the patient was not again troubled for six or eight hours, when, the pains becoming again severe, a single dose of fifteen grains was sufficient to give her a comfortable night. The next morning, the pains again returning, two doses of fifteen grains each, given with an interval of half an hour, soon put an end to the patient's suffering, and there was no further return of the after-pains.

CASE V. — K. P., aged 31, was confined with her fourth child December 17th. After her second and third child were born she had suffered severely for nearly forty-eight hours from after-pains, which now became very severe about eight hours after her fourth child was born. With the view of aiding the uterine contractions, and at the same time of relieving the pains, the following prescription was ordered:



"℞ Extracti fluidi ergotæ ʒij. ; Hydratis chlorali ʒj. ; Aquæ menthæ piperitæ ad ʒj. M. Sig. two teaspoonfuls every hour, if necessary." The relief experienced was so great that the second dose was not taken until the evening following, when the medicine was repeated, as there were some symptoms of returning pains.

*As an Anesthetic during Labor.* — Although I have used chloral in a number of cases with a view of testing its anesthetic properties, I confess I have never seen it act so effectually as to warrant the belief that it will ever take the place of ether or chloroform as an anesthetic. Its effects, however, are striking, and, to a certain degree, very satisfactory. It seems especially adapted to that large class of cases in which the pains may be described as "nagging." They occur at very short intervals, last but a moment, and are very severe. Very little progress is apparently made in the dilatation of the os, but the patient becomes restless, fatigued, and nervous. In such cases the administration of chloral is followed by the happiest results. The intervals between the pains are lengthened, while the pains themselves last longer, and are much stronger and more effectual, although at the same time the patient may describe the character of the pains as being much less severe. Not infrequently she will doze in the intervals, and at the termination of the labor she will be much less exhausted than if nature had been left to take her own course.

CASE VI. A. C., aged 24, primipara. Labor began about four o'clock in the afternoon of January 11th. The membranes ruptured about ten o'clock in the evening. The pains were then occurring every two or three minutes, lasting, however, but a short time, and were very severe. The os was about one third dilated. An hour later, the pains continuing the same, the patient began to be very nervous and impatient. Twenty grains of chloral were given at 11.25 followed at 11.45 by fifteen more. A few moments after the second dose was given the whole character of the pains altered. They occurred at regular intervals of seven or eight minutes and were much more lasting than before the

chloral was given. The patient became quiet and very drowsy, crying out occasionally during a pain, but usually showing the presence of a pain only by a groan. The dilatation of the os went on very rapidly, and the child was born at twenty minutes past four.

As regards its anesthetic properties, I have frequently seen the best results follow its administration. The patient is not, it is true, rendered insensible to the pains, but she feels them much less severely than without the chloral. Their intensity is greatly diminished, and the patient becomes drowsy and not unfrequently sleeps between each pain. At the close of the labor she is not as exhausted as is usually the case even after an ordinary labor. The dose required varies with the severity of the labor. Fifteen grains repeated at intervals of twenty minutes, as recommended by Dr. Playfair, until three doses have been given, will usually be sufficient for the purpose in view; frequently, however, it will not be necessary to give the third dose. On the other hand, it will often be found necessary to give an additional dose of twenty grains, three or four hours after the third dose has been given.

CASE VII. A. D., aged 31, primipara, entered the Boston Lying-in Hospital in August, 1876, to await her confinement. Labor began August 23d at two o'clock in the morning. At 7.10 the os was dilated about two thirds. The pains, almost uninterrupted, were very severe. At 7.20 the first dose of chloral (gr. xv.) was given. In a few minutes the pains became shorter, the intervals longer, and the relief to the patient was very marked. She sat up in bed and expressed herself as more comfortable. At 7.40 the second dose was given and at 8 o'clock the third. The pains were decidedly stronger and occurred with well marked intervals. The patient suffered but little. Between each pain she slept, and frequently the presence of a pain was manifested only by a groan and a restless movement of the body. There was, however, no advance of the presenting part. At noon, as the patient seemed to be again suffering from the pains, a fourth dose of the chloral was given. Almost immediate relief



followed and she again dozed in the intervals between the pains. When asked questions she would talk at random, as if partially under the influence of ether. The head, however, made but slow progress, and she was finally delivered with forceps about five o'clock the next morning. The convalescence was normal.

CASE VIII. A. V., aged 19, primipara, entered the Boston Lying-in Hospital in labor in the evening of August 26th, 1876. An examination showed the os to be about a fourth dilated. The pains were feeble until about midnight, when they became frequent and severe. They were, however, of short duration and productive of but little effect. At 12.40 the first dose of chloral (gr. xv.) was given. The pains became at once less frequent but more powerful and effective. At one o'clock the second dose was given, followed by the third at 1.20. The patient was drowsy and complained but little of the pains, sleeping apparently during the intervals. At 2.45 the membranes were ruptured and at 3.10 the child was born.

CASE IX. G. M., aged 23, primipara. Labor began about midnight, May 16th, 1876. At my first visit (6.30) the os was about one fourth dilated and presented to the touch the feel of a thin unyielding ring. The pains occurred every six or eight minutes and were severe. At eight o'clock and again at ten no advance was found to have been made in the dilatation of the os, which still felt thin and unyielding. The pains were more frequent and severe. The patient was becoming very tired and nervous. At 10.15 chloral (gr. xv.) was given, and repeated at 10.35 and 11 o'clock. The patient became drowsy and slept much of the time, although moaning and occasionally crying out during a pain. At 11.30 the rigid feel of the os had disappeared and the dilatation was two thirds completed. At one o'clock the membranes ruptured and the child was born shortly after two o'clock.

*Puerperal Mania.* I have never had an opportunity to use chloral in attacks of puerperal mania, but, according to Dr. Fordyce Barker and others, its value in these cases is very great, the administration of from fifteen to twenty



grains every two hours producing a quiet refreshing sleep, which is not followed by any cerebral excitement or by any of the unpleasant secondary effects which are so frequently seen after the use of opiates. In cases where it could not be given by the mouth, an enema containing thirty grains, and repeated every third hour, will usually be successful in producing the much needed sleep.

*Puerperal Convulsions.* Many cases have been reported in the journals in which the value of chloral in the treatment of puerperal convulsions has been recorded. M. Bourdon has used it with success in the treatment of such cases in La Charité,<sup>1</sup> and Playfair strongly advises its use, especially in combination with the bromide of potassium. The fact that it can be given at regular intervals, and does not require the constant watching which the use of ether necessitates, renders it a valuable addition to our list of drugs, provided that its effect in controlling the convulsions be found, after careful observation of a large number of cases, to be equal to that which we know is produced by the administration of ether or chloroform.

CASE X. S. P., aged 27, primipara. Labor began early in the afternoon of June 3. Six hours later, the os being about two thirds dilated, the patient was seized with a convulsion. I first saw the patient half an hour later, as she was coming out of the second attack. The urine was highly albuminous, and a subsequent examination showed a number of granular casts. Fifteen minutes later she had a third convulsion. Thirty grains each of bromide of potassium and hydrate of chloral were given. Half an hour later she had a fourth attack, which was, however, much less severe than before. The os being dilated, she was immediately etherized, and the membranes having been ruptured, she was delivered with forceps. The bromide and the chloral were repeated, and the patient soon fell asleep, and slept quietly for over six hours. There was no further return of the convulsions, and the patient made a good recovery.

In cases where it cannot be given by the mouth, it has

<sup>1</sup> *Gazette des Hôpitaux*, Feb. 22, 1873.

been used with favorable results<sup>1</sup> in the form of an enema, the dose being about thirty grains, repeated in an hour if necessary. It has also been used subcutaneously, as recommended by Rabl-Keickhard; but, when so used, it is apt to produce troublesome and painful abscesses.

*Insomnia.* — After tedious or exhausting labors the patient is frequently very wakeful, and in such cases the use of chloral, in thirty grain doses, will be followed by the greatest possible benefit. A quiet, refreshing sleep can be at once produced, from which the patient awakes completely rested. One dose will usually be sufficient, but the chloral should be repeated in half an hour, if necessary.

In cases of insomnia, in which an attack of puerperal mania is unquestionably threatening, Dr. Madden has found<sup>2</sup> that the patient, who had had no sleep for three nights, and who was talking wildly and showing a marked aversion to her child, fell into a quiet sleep, from which she awoke with her mental condition perfectly restored, after the administration of twenty grains only of the hydrate of chloral.

It would seem, therefore, from the above cases, and others similar in many respects to them, in which I have used this remedy, that in chloral we have a valuable agent, which will render good service in the treatment of many of those deviations from a normal labor which an obstetrician is constantly called upon to treat. As a substitute for opiates, as a powerful, although not perfectly satisfactory anesthetic agent, and as a valuable remedy for the relief of those affections of the nervous system which so frequently occur in obstetric practice, it seems fairly to deserve to be more widely known among the medical profession than it is at present.

<sup>1</sup> *Berliner Klinische Wochenschrift*, i. 1870.

<sup>2</sup> *Dublin Quarterly Journal*, May, 1870.













